

8 *Astronomer Royal, Observations of Small Planets.*

$$\begin{aligned}
 &= \frac{\cos p \cdot \cos h}{\sin p \cdot \sin h} - \frac{\cot l}{\sin h} \\
 &= \frac{\cos p \cdot \cos h - \cot l \cdot \sin p}{\sin p \cdot \sin h} \\
 &= -\frac{\cot S \cdot \sin h}{\sin p \cdot \sin h} = -\frac{\cot S}{\sin p}
 \end{aligned}$$

Or thus, let PC = the polar distance at the A.M. observation, and PA the polar distance at the P.M. observation, and AB a parallel of declination, as the polar distance is diminishing

$$CB = -2C = 2 \cdot dp,$$

And $\angle APC$ is the increment of the hour-angle in consequence of this diminution in the polar distance $= 2 \cdot dh$.

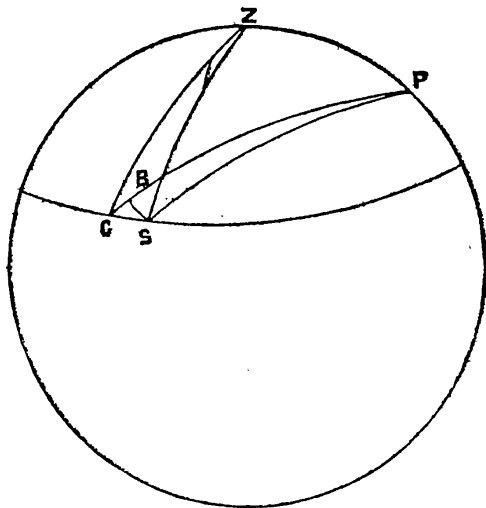
$$AB = APB \sin APC = 2 dh \sin p$$

$$\text{And } \frac{AB}{BC} = \cot \angle BAC = \cot \angle ZAP = \cot S$$

$$\therefore -\frac{dh}{dp} \cdot \sin p = \cot S$$

$$\therefore \frac{dh}{dp} = -\frac{\cot S}{\sin p}$$

Greenwich Hospital, November 9th, 1858.



Results of the Observations of Small Planets, made with the Transit Circle, and of Donati's Comet, made with the Altazimuth, at the Royal Observatory, Greenwich, from July to October 1858.

(Communicated by the Astronomer Royal.)

Proserpine. (26)

	Mean Solar Time of Observation.	Apparent R.A.	Apparent N.P.D.
	h m s	h m s	° ' "
1858, July 19	12 39 55.5	20 29 57.91	114 56 24.18
Aug. 7	11 7 39.1	20 12 21.00	115 53 17.49
9	10 58 6.8	20 10 40.20	115 57 5.38
11	10 48 42.8	20 9 7.78	116 0 19.12
16	10 25 17.4	20 5 21.33	116 6 19.76
Sep. 18	8 7 37.0	19 57 24.55	115 38 34.90

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Lætitia. (89)

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	^h ^m ^s	^h ^m ^s	[°] ['] ["]
1858, Aug. 13	14 51 28.8	0 20 26.76	90 57 27.08
16	14 39 24.2	0 20 9.87	91 16 17.30
20	14 22 57.8	0 19 26.99	91 44 2.84
27	13 53 17.7	0 17 17.82	92 39 16.81
Sep. 1	13 31 26.4	0 15 5.75	93 23 4.81
11	12 46 24.1	0 9 21.60	94 57 56.04
13	12 37 13.7	0 8 2.78	95 17 29.27
15	12 28 1.4	0 6 42.05	95 36 59.39
16	12 23 24.5	0 6 1.01	95 46 46.06
18	12 14 9.4	0 4 37.48	96 6 5.12
23	11 50 58.5	0 1 5.50	96 53 31.41
24	11 46 20.2	0 0 23.02	97 2 46.16
27	11 32 26.0	23 58 16.23	97 29 45.78
30	11 18 34.7	23 56 12.30	97 55 39.26
Oct. 1	11 13 58.3	23 55 31.68	98 3 59.23
2	11 9 22.4	23 54 51.62	98 12 8.23
8	10 42 1.9	23 51 5.90	98 57 19.96
9	10 37 31.3	23 50 31.08	99 4 12.20
11	10 28 33.3	23 49 24.78	99 17 9.66
13	10 19 39.2	23 48 22.33	99 29 19.97
22	9 40 37.2	23 44 42.91	100 13 29.45
25	9 28 0.8	23 43 54.03	100 22 33.77
26	9 23 51.5	23 43 40.66	100 25 44.82
28	9 15 37.2	23 43 18.08	100 30 33.49
30	9 7 28.9	23 43 1.56	100 34 18.37

Pomona. (82)

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	^h ^m ^s	^h ^m ^s	[°] ['] ["]
1858, Oct. 11	12 4 4.6	1 25 11.78	78 5 7.04
14	11 49 44.4	1 22 38.83	78 25 25.38
15	11 44 57.8	1 21 47.98	78 32 12.06

Ariadne. (48)

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	^h ^m ^s	^h ^m ^s	[°] ['] ["]
1858, Oct. 8	14 42 1.0	3 51 44.41	66 16 18.66
11	14 28 48.9	3 50 19.87	66 20 30.91
15	14 10 45.1	3 47 59.32	66 27 58.44
20	13 47 28.9	3 44 22.04	66 40 25.62

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Mean Solar Time of Observation.	h m s			Apparent R.A.			Apparent N.P.D.		
							°	'	"
1858, July 14	12	20	31.1	19	50	47.55	105	30	34.96
17	12	5	33.5	19	47	37.20	105	31	49.26
19	11	55	33.8	19	45	28.89	105	32	50.83
29	11	5	43.4	19	34	55.94	105	40	13.56
31	10	55	50.9	19	32	54.94	105	42	1.23
Aug. 6	10	26	36.5	19	27	15.04	105	47	53.40
9	10	12	15.1	19	24	41.00	105	50	54.54
11	10	2	47.9	19	23	5.32	105	52	58.42
13	9	53	26.4	19	21	35.38	105	54	56.57
19	9	26	4.2	19	17	48.04	106	1	1.25
23	9	8	25.3	19	15	52.45	106	4	51.55
24	9	4	5.2	19	15	28.22	106	5	48.33
25	8	59	47.3	19	15	6.12	106	6	43.11
27	8	51	17.0	19	14	27.57	106	8	25.13
28	8	47	4.9	19	14	11.28	106	9	13.99
30	8	38	46.4	19	13	44.57	106	10	53.29
Sep. 13	7	44	21.1	19	14	22.07	106	19	5.75
15	7	37	6.1	19	14	59.03	106	19	41.58
24	7	5	59.8	19	19	16.59	106	19	54.90

Urania. (80)

Mean Solar Time of Observation.	h m s			Apparent R.A.			Apparent N.P.D.		
							°	'	"
1858, Sep. 11	13	51	16.3	1	14	24.46	78	40	20.76
13	13	42	25.5	1	13	25.27	78	42	38.64
16	13	28	56.7	1	11	43.91	78	47	39.05
18	13	19	49.7	1	10	28.53	78	51	53.23
25	12	47	10.5	1	5	19.83	79	12	37.95
30	12	23	18.2	1	1	6.39	79	32	20.47
Oct. 2	12	13	39.6	0	59	19.35	79	41	16.24
8	11	44	34.8	0	53	49.11	80	10	29.78
11	11	30	1.9	0	51	3.43	80	26	8.95
13	11	20	21.5	0	49	14.59	80	36	47.46
14	11	15	32.1	0	48	20.89	80	42	8.30
15	11	10	43.1	0	47	27.72	80	47	26.54
22	10	37	24.9	0	41	39.95	81	24	20.69
28	10	9	38.6	0	37	28.38	81	53	29.12
30	10	0	35.4	0	36	16.79	82	2	23.86

Leda. (88)

Mean Solar Time of Observation.	h m s			Apparent R.A.			Apparent N.P.D.		
							°	'	"
1858, Aug. 7	11	30	54.8	20	35	40.45	106	8	11.40
16	10	47	51.3	20	27	58.85	106	22	6.52

Parthenope. (11)

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	^h ^m ^s	^h ^m ^s	[°] ['] ["]
1858, July 8	11 19 37.2	18 26 4.29	109 52 47.55
14	10 50 40.6	18 20 42.28	110 12 34.83
17	10 36 25.9	18 18 14.87	110 22 40.81
19	10 27 2.0	18 16 42.55	110 29 16.17
21	10 17 44.4	18 15 16.54	110 35 54.00
28	9 46 1.8	18 11 4.68	110 58 43.26
30	9 37 14.1	18 10 8.69	111 5 8.11
31	9 32 52.7	18 9 43.06	111 8 17.82
Aug. 9	8 55 9.2	18 7 22.35	111 35 52.81
13	8 39 14.9	18 7 11.75	111 47 31.03

Egeria. (18)

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	^h ^m ^s	^h ^m ^s	[°] ['] ["]
1858, Aug. 25	14 49 12.0	1 5 28.25	102 32 22.44
Sep. 11	13 31 38.1	0 54 43.00	103 36 45.08
13	13 22 4.2	0 53 0.66	103 43 41.29
16	13 7 36.2	0 50 19.99	103 53 22.87
18	12 57 52.4	0 48 27.68	103 59 27.36
23	12 33 19.6	0 43 33.60	104 12 15.90
Oct. 2	11 48 39.4	0 34 15.07	104 25 25.95
5	11 33 44.0	0 31 6.88	104 26 33.85
8	11 18 51.8	0 28 1.83	104 25 53.10
11	11 4 3.7	0 25 0.98	104 23 11.33
13	10 54 14.5	0 23 3.25	104 20 20.99
27	9 47 23.3	0 11 12.86	103 36 19.05

Alexandra. (54)

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	^h ^m ^s	^h ^m ^s	[°] ['] ["]
1858, Oct. 25	7 22 13.1	21 37 45.74	94 41 41.13
30	7 5 45.4	21 40 58.07	94 23 46.49

Nysa. (44)

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	^h ^m ^s	^h ^m ^s	[°] ['] ["]
1858, Sep. 13	10 12 2.7	21 42 27.96	105 59 59.52
16	9 58 19.0	21 40 31.60	106 11 56.71
18	9 49 16.0	21 39 20.32	106 19 4.74
Oct. 2	8 48 5.2	21 33 11.14	106 54 51.23

The observations of *Nysa* in N.P.D. have not been corrected for parallax.